CLINICAL ORAL IMPLANTS RESEARCH

Complications of implant-supported restorations in total edentulism: 10 years follow-up

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Background: Long term results represent an essential index of any treatment efficiency. During a long term period the implant-prosthetic treatment is reflected by: success and survival rates, frequency of failures and complications – categories accepted by the community implantologists. The success of implant supported restorations depends on the peri-implant bone as well as prosthesis conditions, which are in fact the final treatment objective.

Aim/Hypothesis: The analysis at 10 years follow-up of the complications occurred after rehabilitation of patients with total edentulism using implant restorations.

Material and Methods: The study was axed on 40 total edentulous patients: 15 of upper jaw (37.5±7.65%) and 25 – lower jaw (62.5±7.65%); from which 16 women (47.05 ± 8.56%) and 18 men (52.95 ± 8.56%). Total edentulism of both jaws were recorded in 12 patients. The implant-prosthetic treatment was made by different superstructures. A total of 271 implants were inserted: 159 one piece (58.7±2.99%) immediately loaded, 4 (1.5±0.74%) two-piece immediately loaded and 108 (39.8±2.97%) conventional loaded ones. The following prosthesis were made: 20 (50.0±7.91%) fixed prosthesis, 7 (17.5±6.01%) hybrid prosthesis, 11 (20.0±6.32%) removable dentures supported on bars and 5 (12.5±5.23%) with ball-attachment support (only in control group). The study group was consisted from 163 (60.1±2.97%) implants immediately loaded, while the control group included 108 (39.9±2.97%) conventionally loaded two-piece implants. During 10 years, failures and post-prosthetic complications which occurred at 107 (39.48 ± 2.97%) implants have been analyzed. In dependence on implant failure, two types of complications were distinguished: with implant loss – 14 (12 study and 2 control) implants, other complications – 93 (69 study and 24 control) implants. Statistical analysis was made by calculating percentages, standard error, Student's paired t test.

Results: The following causes of implant loss in the study group were determined: crown/implant ratio >1 – 2 (14.28±9.35%), poor oral care – 6 (42.86±13.23%), trauma with implants fractures – 2 (14.28±9.35%), unknown – 2 (14.28±9.35%). In the control group periimplantitis were determined in 2 (14.28±9.35%) cases. Other complications which occurred in the study vs. control groups were: discementation – 24 (2.8±4.54% study) vs. 6 (6.45 ±2.51% control), ceramic layer dislocation – 25 (26.88±4.60% study) vs.7 (7.53±2.74% control), mucositis – 7 (7.53±2.74% study) vs. 6 (6.45±2.51% control), threads exposure – 7 (7.53±2.74% study) vs. 2 (2.15±1.50% control), fracture of the superstructure – 0 (study) vs. 3 (3.23±1.83% control), abutment fracture – 6 (6.4±2.51% study).

Conclusions and Clinical Implications: Long term follow-up demonstrates the advantage of implant-prosthetic rehabilitation of patients with total edentulism using two-piece dental implants. During follow-up period, the frequency of complications (21.46±2.49% vs. 8.86±1.73%) as well as failures (4.43±1.25% vs. 0.7±0.51%) are bigger in the study group than in the study one ($P < 0.01$). Some of them are caused by the immediate loading of study group implants which had no secondary stability at that moment.

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